

10579249-319039-EIC SEARCH

SEARCH

=> d his 182

(FILE 'HCAPLUS' ENTERED AT 16:16:27 ON 11 JAN 2010)

L82 6 S L77 AND L81
SAV TEMP L82 WEI249HCP/A

=> d que 182

L2 13 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON (105-58-8/BI
OR 1717-82-4/BI OR 1717-83-5/BI OR 1717-84-6/BI OR
2049-95-8/BI OR 21324-40-3/BI OR 616-38-6/BI OR
623-53-0/BI OR 827-52-1/BI OR 852333-52-9/BI OR
872-36-6/BI OR 96-49-1/BI OR 98-06-6/BI)

L3 1155 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 46.150.1/RID
AND 46.150.18/RID AND X/ELS AND 3/ELC.SUB AND 2/NRS

L4 12078 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 46.150.18/RID
AND 1/NRS AND ((C(L)H)/ELS(L)2/ELC.SUB)

L5 (12078) SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 46.150.18/RID
AND 1/NRS AND ((C(L)H)/ELS(L)2/ELC.SUB)

L6 (271) SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L5 AND
?TERT?/CNS

L7 (117) SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L5 AND
SEC?/CNS

L8 384 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L6 OR L7

L9 (41379) SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON ?CARBONATE?/C
NS

L10 (13115) SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L9 AND NO
RSD/FA

L11 6035 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L10 NOT
M/ELS

L12 3 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L2 AND L11

L13 (41379) SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON ?CARBONATE?/C
NS

L14 28262 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L13 AND
RSD/FA

L15 2 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L2 AND L14

L19 146 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON (DIMETHYLVINY
LENE OR VINYLETHYLENE OR PROPYLENE OR BUTYLENE) (A) CARBO
NATE

L20 142 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L19 AND L14

L21 144 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L20 OR L15

L22 326 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L3 AND 1-2/F

L23 4 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L2 AND L22

L24 2 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L4 AND L2

L27 415 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L4 AND
ISO?/CNS

L29 785 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L8 OR L27

L30 2 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L2 AND L29

L33 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON "BENZENE,
1,3-BIS(1,1-DIMETHYLETHYL)-"/CN

L34 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L29 AND L33

L37 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON "4-TERT-BUTYL
BIPHENYL"/CN

L42 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON "4,4'-DI-TERT
-BUTYLDIPHENYL ETHER"/CN

L43 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON "ETHER,
BIS(P-TERT-PENTYLPHENYL)"/CN

L44 4 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON (L33 OR L34)
OR L37 OR L42 OR L43

L45 (1155) SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 46.150.1/RID
AND 46.150.18/RID AND X/ELS AND 3/ELC.SUB AND 2/NRS

L46 (12078) SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 46.150.18/RID
AND 1/NRS AND ((C(L)H)/ELS(L)2/ELC.SUB)

L47 (271) SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L46 AND

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?TERT?/CNS
L48 (      117)SEA FILE=REGISTRY SPE=ON  ABB=ON  PLU=ON  L46 AND
      SEC?/CNS
L49 (      384)SEA FILE=REGISTRY SPE=ON  ABB=ON  PLU=ON  L47 OR L48
L50 (    41379)SEA FILE=REGISTRY SPE=ON  ABB=ON  PLU=ON  ?CARBONATE?/C
      NS
L51 (    13115)SEA FILE=REGISTRY SPE=ON  ABB=ON  PLU=ON  L50 AND NO
      RSD/FA
L52 (     6035)SEA FILE=REGISTRY SPE=ON  ABB=ON  PLU=ON  L51 NOT
      M/ELS
L53 (    28262)SEA FILE=REGISTRY SPE=ON  ABB=ON  PLU=ON  L50 AND
      RSD/FA
L54 (    111748)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L52
L55 (    190374)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L53
L56 (     1439)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L45
L57 (     8410)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L49
L58 (         6)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L54 AND L55
      AND L56 AND L57
L60 (     8410)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L8
L61 (         6)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L58 AND L60
L62 (     1439)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L3
L63 (         6)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L58 AND L62
L64 (    26442)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L21
L65 (         6)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L63 AND L64
L67 (     628)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L22
L68 (         6)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L58 AND L67
L69 (         20)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L23
L70 (         5)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L69 AND L68
L71 (     294)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L44
L72 (         6)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L58 OR L61 OR
      L63 OR L65 OR L68 OR L70
L73 (         0)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L72 AND L71
L74 (         6)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L72 OR L73
L75 (         0)QUE SPE=ON  ABB=ON  PLU=ON  VOLT? OR TERMINAT?(2A) (VOL
      T? OR V)
L76 (         0)QUE SPE=ON  ABB=ON  PLU=ON  CHARG? OR DISCHARG? OR BAT
      TER?(2A) (LITHIUM? OR LI OR SECONDAR?) OR ELECTROLYT? OR
      NONAQUEOUS? OR NON(W)AQUEOUS? OR ANODE OR CATHODE OR E
      LECTRODE(2A) (POSITIVE OR NEGATIVE)
L77 (         6)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L74 AND (L75
      OR L76)
L78 (         15)SEA FILE=REGISTRY SPE=ON  ABB=ON  PLU=ON  L12 OR L15
      OR L23 OR L24 OR L30 OR L44
L79 (         17)SEA FILE=REGISTRY SPE=ON  ABB=ON  PLU=ON  L2 OR L78
L80 (         0)SEL  PLU=ON  L79 1- NAME :         70 TERMS
L81 (    64238)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L80
L82 (         6)SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L77 AND L81

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SEARCH RESULTS

=> d 182 1-6 ibib ed abs hitstr hitind

L82 ANSWER 1 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2007:1277956 HCAPLUS Full-text

DOCUMENT NUMBER: 147:525343

TITLE: Nonaqueous electrolyte
solution and secondary
nonaqueous electrolyte
batteryINVENTOR(S): Fujii, Takashi; Shima, Noriko; Ohashi,
Youichi; Kinoshita, Shinichi

PATENT ASSIGNEE(S): Mitsubishi Chemical Corporation, Japan

SOURCE: PCT Int. Appl., 241 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007126068	A1	20071108	WO 2007-JP59207	2007 0427
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
JP 2007299541	A	20071115	JP 2006-124042	2006 0427
JP 2007299542	A	20071115	JP 2006-124044	2006 0427
JP 2007299543	A	20071115	JP 2006-124045	2006 0427
JP 2007317654	A	20071206	JP 2007-118487	2007 0427
JP 2007317655	A	20071206	JP 2007-118488	2007 0427
EP 2012386	A1	20090107	EP 2007-742642	2007 0427
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, MK, RS				
CN 101432923	A	20090513	CN 2007-80015008	2008 1027
KR 2008111139	A	20081222	KR 2008-728011	2008

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US 20090325065 A1 20091231 US 2009-298440 1117
2009
0211
PRIORITY APPLN. INFO.: JP 2006-124041 A 2006
0427
JP 2006-124042 A 2006
0427
JP 2006-124043 A 2006
0427
JP 2006-124044 A 2006
0427
JP 2006-124045 A 2006
0427
WO 2007-JP59207 W 2007
0427

ED Entered STN: 09 Nov 2007

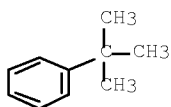
AB The battery has a Li-intercalating anode containing an anode active mass which comprises ≥ 1 atom selected from Si, Sn and Pb, and an electrolyte solution; where the electrolyte solution contains a carbonate containing an unsatd. bond and/or a halogen atom, and at least one compound selected from compds. (A), (B), (C), (D) and (E) specified in the description.

IT 98-06-6, (1,1-Dimethyl ethyl) benzene
1717-82-4, 1-Cyclohexyl 2-fluorobenzene 1717-84-6, 1-Cyclohexyl 4-fluorobenzene

RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte solns. containing carbonates and additives
for secondary lithium batteries)

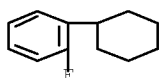
RN 98-06-6 HCAPLUS

CN Benzene, (1,1-dimethylethyl)- (CA INDEX NAME)



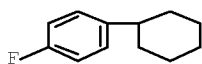
RN 1717-82-4 HCAPLUS

CN Benzene, 1-cyclohexyl-2-fluoro- (CA INDEX NAME)

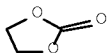


RN 1717-84-6 HCAPLUS

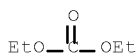
CN Benzene, 1-cyclohexyl-4-fluoro- (CA INDEX NAME)



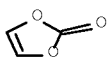
IT 96-49-1, Ethylene carbonate
 105-58-8, Diethyl carbonate
 872-36-6, Vinylene carbonate
 4427-96-7, Vinyl ethylene carbonate
 114435-02-8, Fluoroethylene carbonate
 RL: TEM (Technical or engineered material use); USES (Uses)
 (electrolyte solns. containing carbonates and additives
 for secondary lithium batteries)
 RN 96-49-1 HCAPLUS
 CN 1,3-Dioxolan-2-one (CA INDEX NAME)



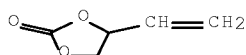
RN 105-58-8 HCAPLUS
 CN Carbonic acid, diethyl ester (CA INDEX NAME)



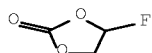
RN 872-36-6 HCAPLUS
 CN 1,3-Dioxol-2-one (CA INDEX NAME)



RN 4427-96-7 HCAPLUS
 CN 1,3-Dioxolan-2-one, 4-ethenyl- (CA INDEX NAME)



RN 114435-02-8 HCAPLUS
 CN 1,3-Dioxolan-2-one, 4-fluoro- (CA INDEX NAME)



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CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary battery anode silicon tin
lead; battery electrolyte carbonate
lithium salt anhydride

IT Battery anodes
Battery electrolytes
(electrolyte solns. containing carbonates and additives
for secondary lithium batteries)

IT Secondary batteries
(lithium; electrolyte solns. containing
carbonates and additives for secondary
lithium batteries)

IT 55-98-1, Busulfan 66-27-3, Methyl methane sulfonate 67-68-5,
Dimethyl sulfoxide, uses 67-71-0, Dimethyl sulfone 75-18-3,
Dimethyl sulfide 85-44-9, Phthalic anhydride 92-06-8,
1,3-Diphenyl benzene 92-52-4, Biphenyl, uses 98-08-6
, (1,1-Dimethyl ethyl) benzene 108-30-5, Succinic anhydride,
uses 108-31-6, Maleic anhydride, uses 127-63-9, Diphenyl
sulfone 139-66-2, Diphenyl sulfide 462-06-6, Fluorobenzene
544-40-1, Dibutyl sulfide 629-45-8, Dibutyl disulfide 699-30-9
756-79-6, Dimethyl methyl phosphonate 791-28-6, Triphenyl
phosphine oxide 814-29-9, Tributyl phosphine oxide 827-52-1,
Cyclohexyl benzene 882-33-7, Diphenyl disulfide 945-51-7,
Diphenyl sulfoxide 1667-08-9 1717-82-4, 1-
Cyclohexyl 2-fluorobenzene
1717-84-6, 1-Cyclohexyl 4-
fluorobenzene 1973-15-5 2170-03-8, Itaconic anhydride
2240-41-7, Dimethyl phenyl phosphonate 3561-67-9, Bis(phenyl
thio) methane 4480-83-5, Diglycolic anhydride 4775-09-1, Ethyl
diethyl phosphinate 16156-59-5, Phenyl methane sulfonate
25236-64-0, 2,2,2-Trifluoroethyl methane sulfonate 33454-82-9,
Lithium trifluoromethane sulfonate 90076-65-6 117186-54-6
132404-42-3 132843-44-8 390750-44-4 409071-16-5
412030-34-3 521065-36-1
RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte solns. containing carbonates and additives
for secondary lithium batteries)

IT 96-49-1, Ethylene carbonate
105-58-8, Diethyl carbonate
872-36-6, Vinylene carbonate
4427-96-7, Vinyl ethylene carbonate
12190-79-3, Cobalt lithium oxide (CoLiO₂) 21324-40-3,
Lithium hexafluorophosphate
114435-02-8, Fluoroethylene carbonate 918298-87-0,
Carbon 12, copper 8.1, silicon 73
RL: TEM (Technical or engineered material use); USES (Uses)
(electrolyte solns. containing carbonates and additives
for secondary lithium batteries)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L82 ANSWER 2 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2006:734562 HCAPLUS Full-text

DOCUMENT NUMBER: 145:191970

TITLE: Nonaqueous electrolyte
solution and secondary
lithium battery using the
solution

INVENTOR(S): Abe, Koji; Kuwata, Takaaki

PATENT ASSIGNEE(S): Ube Industries, Ltd., Japan

SOURCE: PCT Int. Appl., 47 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

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FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

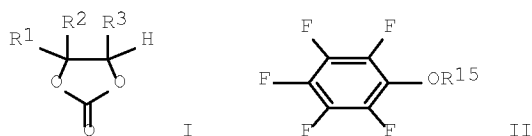
PATENT NO. ----- -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
WO 2006077763	A1	20060727	WO 2006-JP300278	2006 0112
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
CN 101107745	A	20080116	CN 2006-80002854	2006 0112
IN 2007CN03175	A	20070907	IN 2007-CN3175	2007 0719
KR 2007097072	A	20071002	KR 2007-716598	2007 0719
US 20090053598	A1	20090226	US 2007-814372	2007 0720
PRIORITY APPLN. INFO.:			JP 2005-12728	A 2005 0120
			JP 2005-12729	A 2005 0120
			WO 2006-JP300278	W 2006 0112

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 145:191970

ED Entered STN: 27 Jul 2006

GI



AB The ~~electrolyte~~ solution has an ~~electrolyte~~ salt dissolved in a ~~nonaq.~~ solvent; where the ~~electrolyte~~ solution further contains 0.1-10 weight% ~~ethylene carbonate~~ derivative I (R¹-3 = H, halo, C²-12 alkenyl, C²-12 alkynyl, or C⁶-18 aryl group), and 0.01-10 weight% triple bond-containing compound and/or a pentafluorophenyl oxy compound II (R¹⁵

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= C2-12 alkyl carbonyl, C2-12 alkoxy carbonyl, C7-18 aryloxy carbonyl, or C1-12 alkane sulfonyl group; and ≥ 1 H atom in R15 is substituted by halo atom or C6-18 aryl group). The battery has a cathode containing a Li composite oxide, an anode containing graphite, and the above electrolyte solution

IT 96-49-1, Ethylene carbonate

105-58-8, Diethyl carbonate

623-53-0, Methyl ethyl

carbonate

RL: DEV (Device component use); USES (Uses)

(electrolyte solns. having ethylene

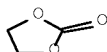
carbonate derivs. and pentafluorophenyl oxy compds.

and/or triple bond-containing compds. for secondary

lithium batteries)

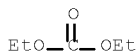
RN 96-49-1 HCAPLUS

CN 1,3-Dioxolan-2-one (CA INDEX NAME)



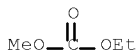
RN 105-58-8 HCAPLUS

CN Carbonic acid, diethyl ester (CA INDEX NAME)



RN 623-53-0 HCAPLUS

CN Carbonic acid, ethyl methyl ester (CA INDEX NAME)



IT 98-06-6, tert-Butyl benzene 2049-95-8

4427-96-7, Vinyl ethylene carbonate

61764-71-4, Methyl 2-propynyl carbonate

79493-91-7, Dipropargyl carbonate 114435-02-8,

Fluoroethylene carbonate 902243-09-8

RL: MOA (Modifier or additive use); USES (Uses)

(electrolyte solns. having ethylene

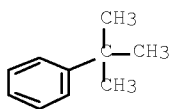
carbonate derivs. and pentafluorophenyl oxy compds.

and/or triple bond-containing compds. for secondary

lithium batteries)

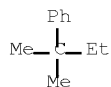
RN 98-06-6 HCAPLUS

CN Benzene, (1,1-dimethylethyl)- (CA INDEX NAME)

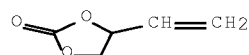


10579249-319039-EIC SEARCH

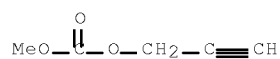
RN 2049-95-8 HCAPLUS
CN Benzene, (1,1-dimethylpropyl)- (CA INDEX NAME)



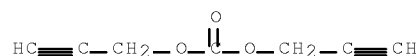
RN 4427-96-7 HCAPLUS
CN 1,3-Dioxolan-2-one, 4-ethenyl- (CA INDEX NAME)



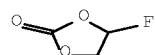
RN 61764-71-4 HCAPLUS
CN Carbonic acid, methyl 2-propyn-1-yl ester (CA INDEX NAME)



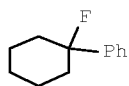
RN 79493-91-7 HCAPLUS
CN 2-Propyn-1-ol, 1,1'-carbonate (CA INDEX NAME)



RN 114435-02-8 HCAPLUS
CN 1,3-Dioxolan-2-one, 4-fluoro- (CA INDEX NAME)



RN 902243-09-8 HCAPLUS
CN Benzene, (1-fluorocyclohexyl)- (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary battery electrolyte
ethylene carbonate deriv pentafluorophenyl oxy

10579249-319039-EIC SEARCH

compd; battery electrolyte triple bond contg compd

- IT Battery electrolytes
(electrolyte solns. having ethylene carbonate derivs. and pentafluorophenyl oxy compds. and/or triple bond-containing compds. for secondary lithium batteries)
- IT Secondary batteries
(lithium; electrolyte solns. having ethylene carbonate derivs. and pentafluorophenyl oxy compds. and/or triple bond-containing compds. for secondary lithium batteries)
- IT 96-49-1, Ethylene carbonate
105-58-8, Diethyl carbonate
623-53-0, Methyl ethyl carbonate 12190-79-3, Cobalt lithium oxide (CoLiO₂)
21324-40-3, Lithium hexafluorophosphate
39361-75-6, Cobalt zirconium oxide 346417-97-8, Cobalt lithium manganese nickel oxide (Co_{0.33}LiMn_{0.33}Ni_{0.33}O₂)
RL: DEV (Device component use); USES (Uses)
(electrolyte solns. having ethylene carbonate derivs. and pentafluorophenyl oxy compds. and/or triple bond-containing compds. for secondary lithium batteries)
- IT 98-06-6, tert-Butyl benzene 536-74-3, Phenyl acetylene
827-52-1, Cyclohexyl benzene 2049-95-8
4427-96-7, Vinyl ethylene carbonate
7310-92-1 13702-09-5 14283-07-9, Lithium tetrafluoroborate
16156-58-4, 2-Propynyl methane sulfonate 19220-93-0,
Pentafluorophenyl acetate 26842-65-9 32042-39-0
61764-71-4, Methyl 2-propynyl carbonate
79493-91-7, Dipropargyl carbonate 90076-65-6
114435-02-8, Fluoroethylene carbonate 161912-36-3
197244-15-8 406725-07-3 417706-30-0 902243-09-8
RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte solns. having ethylene carbonate derivs. and pentafluorophenyl oxy compds. and/or triple bond-containing compds. for secondary lithium batteries)
- IT 2917-96-6
RL: MOA (Modifier or additive use); USES (Uses)
(example; electrolyte solns. having ethylene carbonate derivs. and pentafluorophenyl oxy compds. and/or triple bond-containing compds. for secondary lithium batteries)

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L82 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2005:451712 HCAPLUS Full-text

DOCUMENT NUMBER: 143:10534

TITLE: Nonaqueous electrolyte solution and secondary lithium battery

INVENTOR(S): Abe, Koji; Hattori, Takashi; Matsumori, Yasuo

PATENT ASSIGNEE(S): Ube Industries, Ltd., Japan

SOURCE: PCT Int. Appl., 28 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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10579249-319039-EIC SEARCH

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WO 2005048391      A1      20050526      WO 2004-JP16749
                                                    2004
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    KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
    MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL,
    PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,
    TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
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    LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG,
    CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
CA 2545791      A1      20050526      CA 2004-2545791
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EP 1691441      A1      20060816      EP 2004-818499
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R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,
    MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ,
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CN 1906794      A      20070131      CN 2004-80040412
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CN 100459274      C      20090204
US 20070082271      A1      20070412      US 2006-579249
                                                    2006
                                                    0512

ZA 2006004773      A      20070328      ZA 2006-4773
                                                    2006
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KR 2006121173      A      20061128      KR 2006-711531
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IN 2006CN02096      A      20070706      IN 2006-CN2096
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PRIORITY APPLN. INFO.:      JP 2003-383404      A
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                        JP 2004-25833      A
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                                                    0202

                        WO 2004-JP16749      W
                                                    2004
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ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

ED Entered STN: 27 May 2005

AB The ~~electrolyte~~ solution has an ~~electrolyte~~ salt dissolved in a ~~nonaq.~~ solvent, containing a cyclic carbonate compound, a linear carbonate compound, and a cyclohexyl benzene compound having 1 or 2 halo atoms bonded to a benzene ring; where the volume ratio of the cyclic carbonate compound to the linear carbonate compound in the ~~nonaq.~~ solvent is 20-40:60-80, or the solvent further contains a small amount of a branched alkylbenzene compound The battery has a ~~cathode~~, an ~~anode~~, and the above ~~electrolyte~~ solution

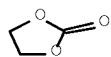
IT 96-49-1, Ethylene carbonate
623-53-0, Methyl ethyl
carbonate 872-36-6, Vinylene
carbonate

RL: DEV (Device component use); USES (Uses)

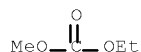
10579249-319039-EIC SEARCH

(electrolyte solns. containing cyclic carbonate compds.,
linear carbonate compds. and cyclohexyl benzene compds. for
secondary lithium batteries)

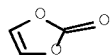
RN 96-49-1 HCAPLUS
CN 1,3-Dioxolan-2-one (CA INDEX NAME)



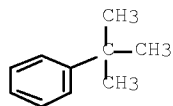
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CN Carbonic acid, ethyl methyl ester (CA INDEX NAME)



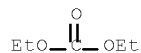
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CN 1,3-Dioxol-2-one (CA INDEX NAME)



IT 98-06-6, tert-Butyl benzene 105-58-8,
Diethyl carbonate 616-38-6,
Dimethyl carbonate 1717-82-4
1717-83-5 1717-84-6 2049-95-8,
tert-Pentyl benzene 852333-52-9
RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte solns. containing cyclic carbonate compds.,
linear carbonate compds. and cyclohexyl benzene compds. for
secondary lithium batteries)
RN 98-06-6 HCAPLUS
CN Benzene, (1,1-dimethylethyl)- (CA INDEX NAME)



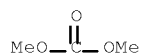
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CN Carbonic acid, diethyl ester (CA INDEX NAME)



RN 616-38-6 HCAPLUS

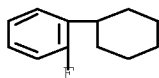
10579249-319039-EIC SEARCH

CN Carbonic acid, dimethyl ester (CA INDEX NAME)



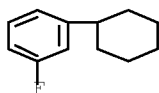
RN 1717-82-4 HCAPLUS

CN Benzene, 1-cyclohexyl-2-fluoro- (CA INDEX NAME)



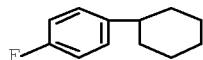
RN 1717-83-5 HCAPLUS

CN Benzene, 1-cyclohexyl-3-fluoro- (CA INDEX NAME)



RN 1717-84-6 HCAPLUS

CN Benzene, 1-cyclohexyl-4-fluoro- (CA INDEX NAME)



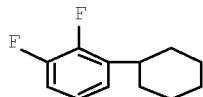
RN 2049-95-8 HCAPLUS

CN Benzene, (1,1-dimethylpropyl)- (CA INDEX NAME)



RN 852333-52-9 HCAPLUS

CN Benzene, 1-cyclohexyl-2,3-difluoro- (CA INDEX NAME)



10579249-319039-EIC SEARCH

IC ICM H01M010-40
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 ST secondary lithium battery
 electrolyte nonaq solvent battery; battery
 electrolyte solvent cyclic linear carbonate cyclohexyl
 benzene compd
 IT Battery electrolytes
 (electrolyte solns. containing cyclic carbonate compds.,
 linear carbonate compds. and cyclohexyl benzene compds. for
 secondary lithium batteries)
 IT Secondary batteries
 (lithium; electrolyte solns. containing cyclic
 carbonate compds., linear carbonate compds. and cyclohexyl
 benzene compds. for secondary lithium
 batteries)
 IT 96-49-1, Ethylene carbonate
 623-53-0, Methyl ethyl
 carbonate 872-36-6, Vinylene
 carbonate 21324-40-3, Lithium
 hexafluorophosphate
 RL: DEV (Device component use); USES (Uses)
 (electrolyte solns. containing cyclic carbonate compds.,
 linear carbonate compds. and cyclohexyl benzene compds. for
 secondary lithium batteries)
 IT 98-06-6, tert-Butyl benzene 105-58-8,
 Diethyl carbonate 616-38-6,
 Dimethyl carbonate 827-52-1, Cyclohexyl
 benzene 1717-82-4 1717-83-5
 1717-84-6 2049-95-8, tert-Pentyl benzene
 852333-52-9
 RL: MOA (Modifier or additive use); USES (Uses)
 (electrolyte solns. containing cyclic carbonate compds.,
 linear carbonate compds. and cyclohexyl benzene compds. for
 secondary lithium batteries)
 REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L82 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 2005:283755 HCAPLUS Full-text
 DOCUMENT NUMBER: 142:358035
 TITLE: Nonaqueous electrolyte
 solution and secondary
 lithium battery using the
 solution
 INVENTOR(S): Abe, Koji; Kuwata, Takaaki
 PATENT ASSIGNEE(S): Ube Industries, Ltd., Japan
 SOURCE: PCT Int. Appl., 26 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2005029631	A1	20050331	WO 2004-JP13687	2004 0917

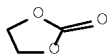
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 KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
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10579249-319039-EIC SEARCH

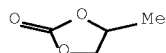
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 MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI,
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 EP 1672729 A1 20060621 EP 2004-773306 2004
 0917
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 CN 1864299 A 20061115 CN 2004-80026823 2004
 0917
 CN 100481604 C 20090422
 KR 2006076304 A 20060704 KR 2006-705312 2006
 0316
 US 20070054185 A1 20070308 US 2006-572571 2006
 0317
 US 7261975 B2 20070828
 PRIORITY APPLN. INFO.: JP 2003-324100 A 2003
 0917
 WO 2004-JP13687 W 2004
 0917

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

ED Entered STN: 01 Apr 2005
 AB The ~~electrolyte~~ solution has an ~~electrolyte~~ salt dissolved in a ~~nonaq.~~ solvent; where
 the ~~electrolyte~~ solution further contains a pentafluorophenyloxy compound C6F5-OR1 (R1
 = substituent selected from C2-12 alkyl carbonyl, C7-18 aryloxy carbonyl and/or C1-12
 alkane sulfonyl group; and at least one H atom of the substituent may be substituted by
 a halogen atom or an C6-18 aryl group) and a ~~vinylene carbonate~~ and/or 1,3-propane
 sultone. The battery has a ~~cathode~~, an ~~anode~~, and the above ~~electrolyte~~ solution
 IT 96-49-1, Ethylene carbonate
 108-32-7, Propylene carbonate 623-53-0,
 Methyl ethyl carbonate
 RL: DEV (Device component use); USES (Uses)
 (electrolyte solns. containing pentafluorophenyloxy
 compds. for secondary lithium
 batteries)
 RN 96-49-1 HCAPLUS
 CN 1,3-Dioxolan-2-one (CA INDEX NAME)

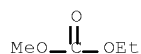


RN 108-32-7 HCAPLUS
 CN 1,3-Dioxolan-2-one, 4-methyl- (CA INDEX NAME)

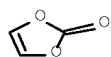


10579249-319039-EIC SEARCH

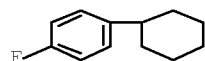
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CN Carbonic acid, ethyl methyl ester (CA INDEX NAME)



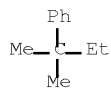
IT 872-36-6, Vinylene carbonate
1717-84-6 2049-95-8, tert-Pentyl benzene
36919-03-6, Methyl pentafluorophenyl carbonate
RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte solns. containing pentafluorophenyl
comps. for secondary lithium
batteries)
RN 872-36-6 HCAPLUS
CN 1,3-Dioxol-2-one (CA INDEX NAME)



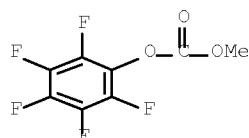
RN 1717-84-6 HCAPLUS
CN Benzene, 1-cyclohexyl-4-fluoro- (CA INDEX NAME)



RN 2049-95-8 HCAPLUS
CN Benzene, (1,1-dimethylpropyl)- (CA INDEX NAME)



RN 36919-03-6 HCAPLUS
CN Carbonic acid, methyl 2,3,4,5,6-pentafluorophenyl ester (CA INDEX NAME)



IC ICM H01M010-40

10579249-319039-EIC SEARCH

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 ST secondary lithium battery
 electrolyte pentafluorophenyloxy compd
 IT Battery electrolytes
 (electrolyte solns. containing pentafluorophenyloxy
 compds. for secondary lithium
 batteries)
 IT Secondary batteries
 (lithium; electrolyte solns. containing
 pentafluorophenyloxy compds. for secondary
 lithium batteries)
 IT 96-49-1, Ethylene carbonate
 108-32-7, Propylene carbonate 623-53-0,
 Methyl ethyl carbonate 7782-42-5,
 Graphite, uses 12057-17-9, Lithium manganese oxide (LiMn2O4)
 12190-79-3, Cobalt lithium oxide (CoLiO2) 14283-07-9, Lithium
 tetrafluoroborate 21324-40-3, Lithium
 hexafluorophosphate
 RL: DEV (Device component use); USES (Uses)
 (electrolyte solns. containing pentafluorophenyloxy
 compds. for secondary lithium
 batteries)
 IT 96-48-0 827-52-1, Cyclohexyl benzene 872-36-6,
 Vinylene carbonate 1120-71-4, 1,3-Propane
 sultone 1717-84-6 2049-95-8, tert-Pentyl
 benzene 5129-37-3, Butyl pivalate 19220-93-0,
 Pentafluorophenyl acetate 38519-03-6, Methyl
 pentafluorophenyl carbonate 71573-77-8, Dipropargyl oxalate
 161912-36-3
 RL: MOA (Modifier or additive use); USES (Uses)
 (electrolyte solns. containing pentafluorophenyloxy
 compds. for secondary lithium
 batteries)
 OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE
 THIS RECORD (5 CITINGS)
 REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L82 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 2005:76450 HCAPLUS Full-text
 DOCUMENT NUMBER: 142:180441
 TITLE: Nonaqueous electrolyte
 solution for secondary
 lithium battery and the
 battery

INVENTOR(S): Abe, Koji; Miyoshi, Kazuhiro; Kuwata, Takaaki
 PATENT ASSIGNEE(S): Ube Industries, Ltd., Japan
 SOURCE: PCT Int. Appl., 48 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2005008829	A1	20050127	WO 2004-JP10194	2004 0716

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 KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
 MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL,
 PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,

10579249-319039-EIC SEARCH

TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
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 CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU,
 MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI,
 CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

CA 2532579 A1 20050127 CA 2004-2532579 2004
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EP 1650826 A1 20060426 EP 2004-747660 2004
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 EE, HU, PL, SK, HR

CN 1853307 A 20061025 CN 2004-80026556 2004
 0716

CN 100517853 C 20090722
 ZA 2006000431 A 20070425 ZA 2006-431 2006
 0116

IN 2006CN00200 A 20070629 IN 2006-CN200 2006
 0116

KR 2006035767 A 20060426 KR 2006-701080 2006
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US 20060177742 A1 20060810 US 2006-564852 2006
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IN 2007CN04612 A 20080328 IN 2007-CN4612 2007
 1016

PRIORITY APPLN. INFO.: JP 2003-198421 A 2003
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JP 2003-383403 A 2003
 1113

WO 2004-JP10194 W 2004
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IN 2006-CN200 A3 2006
 0116

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 142:180441

ED Entered STN: 28 Jan 2005

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
 *

AB The electrolyte solution contains 0.01-10% vinyl carbonate compound I (R1 and R2 = H or
 C1-4 alkyl groups) and 0.01-10% alkyne compds. selected from II-VII (R's and Y's
 defined; and x and p = 1 or 2).

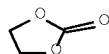
IT 96-49-1, Ethylene carbonate
 108-32-7, Propylene carbonate 623-53-0,
 Ethyl methyl carbonate

10579249-319039-EIC SEARCH

RL: DEV (Device component use); USES (Uses)
 (electrolyte solns. containing vinyl carbonate derivs.
 and alkyne compds. for secondary lithium
 batteries)

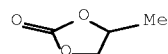
RN 96-49-1 HCAPLUS

CN 1,3-Dioxolan-2-one (CA INDEX NAME)



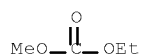
RN 108-32-7 HCAPLUS

CN 1,3-Dioxolan-2-one, 4-methyl- (CA INDEX NAME)



RN 623-53-0 HCAPLUS

CN Carbonic acid, ethyl methyl ester (CA INDEX NAME)



IT 98-06-6, tert-Butylbenzene

872-36-6, Vinylene carbonate

1717-84-6 2049-95-8, tert-

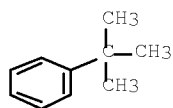
Amylbenzene 61764-71-4 79493-91-7,

Dipropargyl carbonate

RL: MOA (Modifier or additive use); USES (Uses)
 (electrolyte solns. containing vinyl carbonate derivs.
 and alkyne compds. for secondary lithium
 batteries)

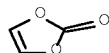
RN 98-06-6 HCAPLUS

CN Benzene, (1,1-dimethylethyl)- (CA INDEX NAME)



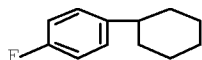
RN 872-36-6 HCAPLUS

CN 1,3-Dioxol-2-one (CA INDEX NAME)

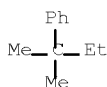


10579249-319039-EIC SEARCH

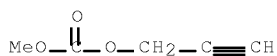
RN 1717-84-6 HCAPLUS
 CN Benzene, 1-cyclohexyl-4-fluoro- (CA INDEX NAME)



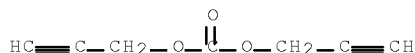
RN 2049-95-8 HCAPLUS
 CN Benzene, (1,1-dimethylpropyl)- (CA INDEX NAME)



RN 61764-71-4 HCAPLUS
 CN Carbonic acid, methyl 2-propyn-1-yl ester (CA INDEX NAME)



RN 79493-91-7 HCAPLUS
 CN 2-Propyn-1-ol, 1,1'-carbonate (CA INDEX NAME)



IC ICM H01M010-40
 ICS H01M004-02; H01M004-58
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 ST secondary lithium battery
 electrolyte soln vinyl carbonate deriv; acetylene group
 compd secondary lithium battery
 electrolyte soln
 IT Battery electrolytes
 (electrolyte solns. containing vinyl carbonate derivs.
 and alkyne compds. for secondary lithium
 batteries)
 IT 96-49-1, Ethylene carbonate
 108-32-7, Propylene carbonate 623-53-0,
 Ethyl methyl carbonate 21324-40-3,
 Lithium hexafluorophosphate 90076-65-6
 RL: DEV (Device component use); USES (Uses)
 (electrolyte solns. containing vinyl carbonate derivs.
 and alkyne compds. for secondary lithium
 batteries)
 IT 98-06-6, tert-Butylbenzene
 452-10-8, 2,4-Difluoroanisole 462-06-6, Fluorobenzene
 536-74-3, Phenylacetylene 827-52-1, Cyclohexylbenzene
 872-36-6, Vinylene carbonate

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1072-53-3, Ethylene sulfate 1120-71-4, 1,3-Propanesultone
 1717-84-6 2049-85-8, tert-
 Amylbenzene 16156-58-4, 2-Propynyl methanesulfonate
 32042-39-0 36677-73-3 61764-71-4 71573-77-8,
 Di(2-propynyl) oxalate 79493-91-7, Dipropargyl
 carbonate 131166-79-5 197244-15-8 347396-84-3 406725-07-3
 833427-83-1

RL: MOA (Modifier or additive use); USES (Uses)
 (electrolyte solns. containing vinyl carbonate derivs.
 and alkyne compds. for secondary lithium
 batteries)

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L82 ANSWER 6 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:159983 HCAPLUS Full-text

DOCUMENT NUMBER: 140:202414

TITLE: Secondary lithium
 battery, nonaqueous
 electrolyte, and method for ensuring
 battery safety

INVENTOR(S): Abe, Hiroshi; Miyoshi, Kazuhiro; Kuwata,
 Takaaki; Matsumori, Yasuo

PATENT ASSIGNEE(S): Ube Industries, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2004063367	A	20040226	JP 2002-222509	2002 0731
JP 4374833	B2	20091202		
PRIORITY APPLN. INFO.:			JP 2002-222509	2002 0731

ED Entered STN: 27 Feb 2004

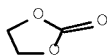
AB The battery uses a Ni or Co containing Li multiple oxide, a Li (alloy) or Li
 intercalating anode, and a nonaq. electrolyte solution; where the electrolyte solution
 contains an organic compound which decomps. to deposit a coating layer on the active Li
 surface, during overcharge of the battery, to ensure the battery safety. Preferably,
 the compound has an redox. potential 4.6.apprx.5.2 V vs. Li, and is a ketone selected
 from menthone, isomenthone, camphor, nopinone, and fenchone and may be mixed with a
 cyclohexylbenzene derivative The electrolyte solution contains the compound

IT 96-49-1, Ethylene carbonate
 105-58-8, Diethyl carbonate
 872-36-6, Vinylene carbonate

RL: DEV (Device component use); USES (Uses)
 (electrolyte solns. containing organic compound additives for
 secondary lithium battery safety)

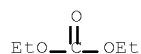
RN 96-49-1 HCAPLUS

CN 1,3-Dioxolan-2-one (CA INDEX NAME)

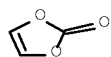


10579249-319039-EIC SEARCH

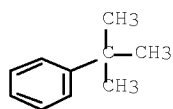
RN 105-58-8 HCAPLUS
CN Carbonic acid, diethyl ester (CA INDEX NAME)



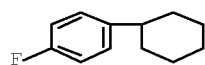
RN 872-36-6 HCAPLUS
CN 1,3-Dioxol-2-one (CA INDEX NAME)



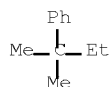
IT 98-06-6, tert-Butylbenzene
1717-84-6 2049-95-8, tert-
Pentylbenzene
RL: MOA (Modifier or additive use); USES (Uses)
(organic compound additives in electrolyte solns. for
secondary lithium battery safety)
RN 98-06-6 HCAPLUS
CN Benzene, (1,1-dimethylethyl)- (CA INDEX NAME)



RN 1717-84-6 HCAPLUS
CN Benzene, 1-cyclohexyl-4-fluoro- (CA INDEX NAME)



RN 2049-95-8 HCAPLUS
CN Benzene, (1,1-dimethylpropyl)- (CA INDEX NAME)



IC ICM H01M010-40
ICS H01M004-02; H01M004-40; H01M004-58
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary lithium battery

10579249-319039-EIC SEARCH

electrolyte safety additive ketone
cyclohexylbenzene

IT Battery electrolytes
Safety
(electrolyte solns. containing organic compound additives for
secondary lithium battery safety)

IT Secondary batteries
(lithium; electrolyte solns. containing organic
compound additives for secondary lithium
battery safety)

IT 96-49-1, Ethylene carbonate
105-58-8, Diethyl carbonate
872-36-6, Vinylene carbonate
21324-40-3, Lithium hexafluorophosphate
RL: DEV (Device component use); USES (Uses)
(electrolyte solns. containing organic compound additives for
secondary lithium battery safety)

IT 76-22-2, Camphor 89-80-5, Menthone 98-06-6,
tert-Butylbenzene 491-07-6, Isomenthone
827-52-1, Cyclohexylbenzene 1717-84-6
2049-95-8, tert-Pentylbenzene
4695-62-9, (+)-Fenchone 24903-95-5, Nopinone 444603-90-1
RL: MOA (Modifier or additive use); USES (Uses)
(organic compound additives in electrolyte solns. for
secondary lithium battery safety)

10579249-319039-EIC SEARCH

FULL SEARCH HISTORY

=> d his nofile

(FILE 'HOME' ENTERED AT 14:47:01 ON 11 JAN 2010)

FILE 'HCAPLUS' ENTERED AT 14:47:10 ON 11 JAN 2010

L1 1 SEA SPE=ON ABB=ON PLU=ON US20070082271/PN
D SCA
D PRAI
SEL RN

FILE 'REGISTRY' ENTERED AT 14:48:16 ON 11 JAN 2010

L2 13 SEA SPE=ON ABB=ON PLU=ON (105-58-8/BI OR 1717-82-4/B
I OR 1717-83-5/BI OR 1717-84-6/BI OR 2049-95-8/BI OR
21324-40-3/BI OR 616-38-6/BI OR 623-53-0/BI OR
827-52-1/BI OR 852333-52-9/BI OR 872-36-6/BI OR
96-49-1/BI OR 98-06-6/BI)
D SCA

FILE 'HCAPLUS' ENTERED AT 14:48:34 ON 11 JAN 2010

D SCA L1

FILE 'REGISTRY' ENTERED AT 14:48:34 ON 11 JAN 2010

FILE 'STNGUIDE' ENTERED AT 14:48:37 ON 11 JAN 2010

FILE 'HCAPLUS' ENTERED AT 14:53:22 ON 11 JAN 2010

D SAV

FILE 'REGISTRY' ENTERED AT 14:53:49 ON 11 JAN 2010

ACT WEI249REG/A

L3 1155 SEA SPE=ON ABB=ON PLU=ON 46.150.1/RID AND 46.150.18/
RID AND X/ELS AND 3/ELC.SUB AND 2/NRS

ACT WEI249REGA/A

L4 12078 SEA SPE=ON ABB=ON PLU=ON 46.150.18/RID AND 1/NRS
AND ((C(L)H)/ELS(L)2/ELC.SUB)

D QUE

D QUE L3

ACT WEI249REGB/A

L5 (12078)SEA SPE=ON ABB=ON PLU=ON 46.150.18/RID AND 1/NRS
AND ((C(L)H)/ELS(L)2/ELC.SUB)

L6 (271)SEA SPE=ON ABB=ON PLU=ON L5 AND ?TERT?/CNS

L7 (117)SEA SPE=ON ABB=ON PLU=ON L5 AND SEC?/CNS

L8 384 SEA SPE=ON ABB=ON PLU=ON L6 OR L7

D QUE

ACT WEI249REGC/A

L9 (41379)SEA SPE=ON ABB=ON PLU=ON ?CARBONATE?/CNS

L10 (13115)SEA SPE=ON ABB=ON PLU=ON L9 AND NO RSD/FA

L11 6035 SEA SPE=ON ABB=ON PLU=ON L10 NOT M/ELS

D QUE

L12 3 SEA SPE=ON ABB=ON PLU=ON L2 AND L11

D SCA

ACT WEI249REGD/A

L13 (41379)SEA SPE=ON ABB=ON PLU=ON ?CARBONATE?/CNS

L14 28262 SEA SPE=ON ABB=ON PLU=ON L13 AND RSD/FA

10579249-319039-EIC SEARCH

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D QUE
L15      2 SEA SPE=ON  ABB=ON  PLU=ON  L2 AND L14
        D SCA
        D 1 CN
        D 2 CN
L16      41379 SEA SPE=ON  ABB=ON  PLU=ON  ?CARBONATE?/CNS
L17      207 SEA SPE=ON  ABB=ON  PLU=ON  L14 AND (DIMETHYLVINYLENE
        OR VINYLETHYLENE OR PROPYLENE OR BUTYLENE)
L18      207 SEA SPE=ON  ABB=ON  PLU=ON  L17 AND L14
L19      146 SEA SPE=ON  ABB=ON  PLU=ON  (DIMETHYLVINYLENE OR
        VINYLETHYLENE OR PROPYLENE OR BUTYLENE) (A) CARBONATE
L20      142 SEA SPE=ON  ABB=ON  PLU=ON  L19 AND L14
L21      144 SEA SPE=ON  ABB=ON  PLU=ON  L20 OR L15
        D QUE L3
L22      326 SEA SPE=ON  ABB=ON  PLU=ON  L3 AND 1-2/F
L23      4 SEA SPE=ON  ABB=ON  PLU=ON  L2 AND L22
        D SCA
L24      2 SEA SPE=ON  ABB=ON  PLU=ON  L4 AND L2
        D SCA
        D 1 CN
        D CN 2
L25      0 SEA SPE=ON  ABB=ON  PLU=ON  L22 AND 9/C
        E ISOPROPYLBENZENE/CN
L26      1 SEA SPE=ON  ABB=ON  PLU=ON  ISOPROPYLBENZENE/CN
        D SCA
        D QUE L5
        D QUE L4
L27      415 SEA SPE=ON  ABB=ON  PLU=ON  L4 AND ISO?/CNS
L28      1 SEA SPE=ON  ABB=ON  PLU=ON  L26 AND L27
        D SCA
L29      785 SEA SPE=ON  ABB=ON  PLU=ON  L8 OR L27
        SAV TEMP L29 WEI249REGC/A
L30      2 SEA SPE=ON  ABB=ON  PLU=ON  L2 AND L29
        D SCA
L31      68 SEA SPE=ON  ABB=ON  PLU=ON  L29 AND 14/C
L32      5 SEA SPE=ON  ABB=ON  PLU=ON  L31 AND (DITERT? OR
        DI(W)TERT?)
        E "BENZENE, 1,3-BIS(1,1-DIMETHYLETHYL)-"/CN
L33      1 SEA SPE=ON  ABB=ON  PLU=ON  "BENZENE, 1,3-BIS(1,1-DIMET
        HYLETHYL)-"/CN
        D SCA
L34      1 SEA SPE=ON  ABB=ON  PLU=ON  L29 AND L33
        E TERT-BIPHENYL/CN
        E "4-TERT-BIPHENYL"/CN
L35      37 SEA SPE=ON  ABB=ON  PLU=ON  L29 AND 16/C
L36      0 SEA SPE=ON  ABB=ON  PLU=ON  L35 AND ?BIPHENYL?/CNS
        D QUEL4
        D QUE L4
        E TERT-BIPHENYL?CN
        E "4-TERT-BUTYLBIPHENYL"/CN
L37      1 SEA SPE=ON  ABB=ON  PLU=ON  "4-TERT-BUTYLBIPHENYL"/CN
        D SCA
        E "BIS(4-TERT-BUTYLPHENYL)/CN
        E "BIS(4-TERT-BUTYLPHENYL)"/CN
        E "BIS(TERT-BUTYLPHENYL)"/CN
        E "BIS(TERT-BUTYLPHENYL) ETHER"/CN
        E "BIS(TERT-BUTYLBIPHENYL) ETHER"/CN
        E "BIS(4-TERT-BUTYLPHENYL) ETHER"/CN
        E C20H26O/MF
L38      797 SEA SPE=ON  ABB=ON  PLU=ON  C20H26O/MF
L39      34 SEA SPE=ON  ABB=ON  PLU=ON  L38 AND ?ETHER?/CNS
L40      3 SEA SPE=ON  ABB=ON  PLU=ON  L39 AND ?BUTYLPHENYL?/CNS
        D SCA
        E "BENZENE, 1,1'-OXYBIS[4-(1,1-DIMETHYLETHYL)-"/CN
        E "BENZENE, 1,1'-OXYBIS[4-(1,1-DIMETHYLETHYL)-"/CN
L41      2 SEA SPE=ON  ABB=ON  PLU=ON  L40 AND ?TERT?/CNS
        D 1-2

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E "4,4'-DI-TERT-BUTYLDIPHENYL ETHER"/CN
 L42 1 SEA SPE=ON ABB=ON PLU=ON "4,4'-DI-TERT-BUTYLDIPHENYL
 ETHER"/CN
 E "4,4'-DI-TERT-PENTYLDIPHENYL ETHER"/CN
 E "4,4'-DI-TERT-PENTYLPHENYL ETHER"/CN
 E "4,4'-DI-TERT-BUTYLDIPHENYL ETHER"/CN
 E "4,4'-DI-TERT-PENTYLDIPHENYL ETHER"/CN
 E TERT-PENTYLDIPHENYL/CNS
 E TERT-PENTYLPHENYL/CNS
 E "ETHER, BIS(P-TERT-BUTYLPHENYL)"/CN
 E "ETHER, BIS(P-TERT-PENTYLPHENYL)"/CN
 L43 1 SEA SPE=ON ABB=ON PLU=ON "ETHER, BIS(P-TERT-PENTYLPH
 ENYL)"/CN
 D SCA
 D CN
 L44 4 SEA SPE=ON ABB=ON PLU=ON (L33 OR L34) OR L37 OR L42
 OR L43

FILE 'HCAPLUS' ENTERED AT 15:53:35 ON 11 JAN 2010

D SAV
 ACT WEI249HCP/A

 L45 (1155)SEA SPE=ON ABB=ON PLU=ON 46.150.1/RID AND 46.150.18/
 RID AND X/ELS AND 3/ELC.SUB AND 2/NRS
 L46 (12078)SEA SPE=ON ABB=ON PLU=ON 46.150.18/RID AND 1/NRS
 AND ((C(L)H)/ELS(L)2/ELC.SUB)
 L47 (271)SEA SPE=ON ABB=ON PLU=ON L46 AND ?TERT?/CNS
 L48 (117)SEA SPE=ON ABB=ON PLU=ON L46 AND SEC?/CNS
 L49 (384)SEA SPE=ON ABB=ON PLU=ON L47 OR L48
 L50 (41379)SEA SPE=ON ABB=ON PLU=ON ?CARBONATE?/CNS
 L51 (13115)SEA SPE=ON ABB=ON PLU=ON L50 AND NO RSD/FA
 L52 (6035)SEA SPE=ON ABB=ON PLU=ON L51 NOT M/ELS
 L53 (28262)SEA SPE=ON ABB=ON PLU=ON L50 AND RSD/FA
 L54 (111748)SEA SPE=ON ABB=ON PLU=ON L52
 L55 (190374)SEA SPE=ON ABB=ON PLU=ON L53
 L56 (1439)SEA SPE=ON ABB=ON PLU=ON L45
 L57 (8410)SEA SPE=ON ABB=ON PLU=ON L49
 L58 6 SEA SPE=ON ABB=ON PLU=ON L54 AND L55 AND L56 AND
 L57

 L59 1 SEA SPE=ON ABB=ON PLU=ON L1 AND L58
 D SCA
 L60 8410 SEA SPE=ON ABB=ON PLU=ON L8
 L61 6 SEA SPE=ON ABB=ON PLU=ON L58 AND L60
 D QUE L3
 L62 1439 SEA SPE=ON ABB=ON PLU=ON L3
 L63 6 SEA SPE=ON ABB=ON PLU=ON L58 AND L62
 L64 26442 SEA SPE=ON ABB=ON PLU=ON L21
 L65 6 SEA SPE=ON ABB=ON PLU=ON L63 AND L64
 D QUE L21
 L66 13696 SEA SPE=ON ABB=ON PLU=ON L12
 L67 628 SEA SPE=ON ABB=ON PLU=ON L22
 L68 6 SEA SPE=ON ABB=ON PLU=ON L58 AND L67
 L69 20 SEA SPE=ON ABB=ON PLU=ON L23
 L70 5 SEA SPE=ON ABB=ON PLU=ON L69 AND L68
 L71 294 SEA SPE=ON ABB=ON PLU=ON L44
 L72 6 SEA SPE=ON ABB=ON PLU=ON L58 OR L61 OR L63 OR L65
 OR L68 OR L70
 L73 0 SEA SPE=ON ABB=ON PLU=ON L72 AND L71
 D QUE L71
 D QUE L71
 L74 6 SEA SPE=ON ABB=ON PLU=ON L72 OR L73
 L75 QUE SPE=ON ABB=ON PLU=ON VOLT? OR TERMINAT?(2A) (VOLT
 ? OR V)
 L76 QUE SPE=ON ABB=ON PLU=ON CHARG? OR DISCHARG? OR
 BATTER?(2A) (LITHIUM? OR LI OR SECONDAR?) OR ELECTROLYT?
 OR NONAQUEOUS? OR NON(W)AQUEOUS? OR ANODE OR CATHODE

10579249-319039-EIC SEARCH

```
OR ELECTRODE(2A) (POSITIVE OR NEGATIVE)
L77      6 SEA SPE=ON  ABB=ON  PLU=ON  L74 AND (L75 OR L76)

FILE 'REGISTRY' ENTERED AT 16:13:31 ON 11 JAN 2010
L78      15 SEA SPE=ON  ABB=ON  PLU=ON  L12 OR L15 OR L23 OR L24
          OR L30 OR L44

FILE 'HCAPLUS' ENTERED AT 16:15:39 ON 11 JAN 2010

FILE 'REGISTRY' ENTERED AT 16:16:00 ON 11 JAN 2010
L79      17 SEA SPE=ON  ABB=ON  PLU=ON  L2 OR L78

FILE 'HCAPLUS' ENTERED AT 16:16:11 ON 11 JAN 2010
          DEL SEL

FILE 'REGISTRY' ENTERED AT 16:16:26 ON 11 JAN 2010
          SET SMARTSELECT ON
L80      SEL PLU=ON  L79 1- NAME :      70 TERMS
          SET SMARTSELECT OFF

FILE 'HCAPLUS' ENTERED AT 16:16:27 ON 11 JAN 2010
L81      64238 SEA SPE=ON  ABB=ON  PLU=ON  L80
L82      6 SEA SPE=ON  ABB=ON  PLU=ON  L77 AND L81
          D SCA
          SAV TEMP L82 WEI249HCP/A
          D QUE L82
          D L82 1-6 IBIB ED ABS HITSTR HITIND
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